Fort George G. Meade

Groundwater Contamination, Odenton, Maryland
Interim Measures Update

Restoration Advisory Board Meeting
May 20, 2010

Study Areas

- 1-mile radius surrounding monitoring wells MW-125d/123s & MW-126d/124s located at the intersection of North Patuxent Road and Dovetail Lane, Odenton
- Old Dairy Farm Road, Gambrills

Monitoring Well Results

Analytes	Maximum Contaminant Level (MCL)	MW-125d	2004 Results	2005 Results	2008 Results	March 2009 Results	June 2009 Results	MW-126d	2004 Results	2005 Results	2008 Results	March 2009 Results	June 2009 Results
METALS													
Lead	15		**16.3**	ND	NT	NT	NT		14.4	ND	NT	NT	NT
Thallium	2		**6.9**	ND	NT	NT	NT		ND	ND	NT	NT	NT
VOLATILE ORGANICS													
Acetone	-		49.2	120	ND	ND	ND		ND	ND	ND	ND	ND
CCl_4	5		**21.3**	**20**	**25**	**20.3**	**17.0**		4.1	3	**51**	**21.8**	**65.8**
Chloroform	-		0.85J	0.8	1J	ND	1.0		0.43J	0.29	2J	ND	1.6
DCE	70		ND	ND	<0.8	ND	ND		0.42J	2.3	3J	0.69J	2.3
PCE	5		2.8	1.2	**5**	0.66J	ND		**12.4**	**6.5**	**51**	**11.5**	**31.4**
Toluene	1,000		0.36J	1.8	ND	ND	ND		0.5J	ND	ND	ND	ND
TCE	5		0.5	0.28	1 J	ND	ND		3.5	2.4	**16**	4.9	**13.1**

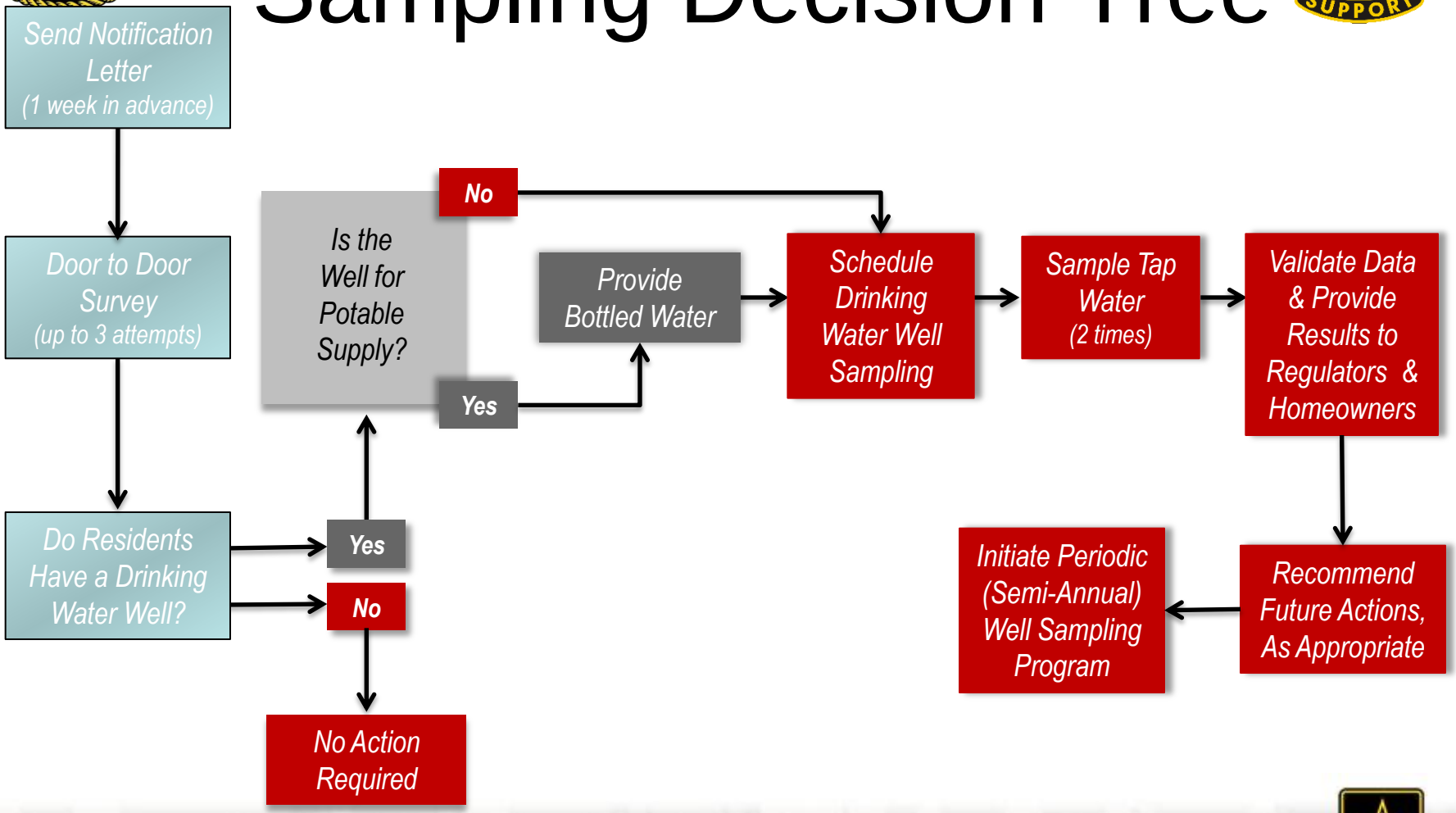
Analytes	MW-123s	2004 Results	March 2009 Results	June 2009 Results	MW-124s	2004 Results	March 2009 Results	June 2009 Results
METALS		All Below MCLs	NT	NT		All Below MCLs	NT	NT
VOLATILE ORGANICS		Dry Well	All ND	All ND		All ND	All ND	All ND

All results in micrograms per liter (ug/L)

NT = Not Tested
ND = Not Detected
CCl_4 = *Carbon Tetrachloride*

DCE = cis-1,2-Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene

Drinking Water Well Sampling Decision Tree



Drinking Water Well Survey

- Initiated April 29, 2009
- Concluded January 21, 2010
- Over 2,500 properties within 1-mile radius
- 16 additional properties on Old Dairy Farm Road
- Results; 1,697 surveys answered
  - 75 Confirmed Primary Drinking Water Source
  - 4 Unconfirmed Primary Drinking Water Source
  - 17 Confirmed Non-Drinking Water Source
  - 24 Confirmed No Well on Property

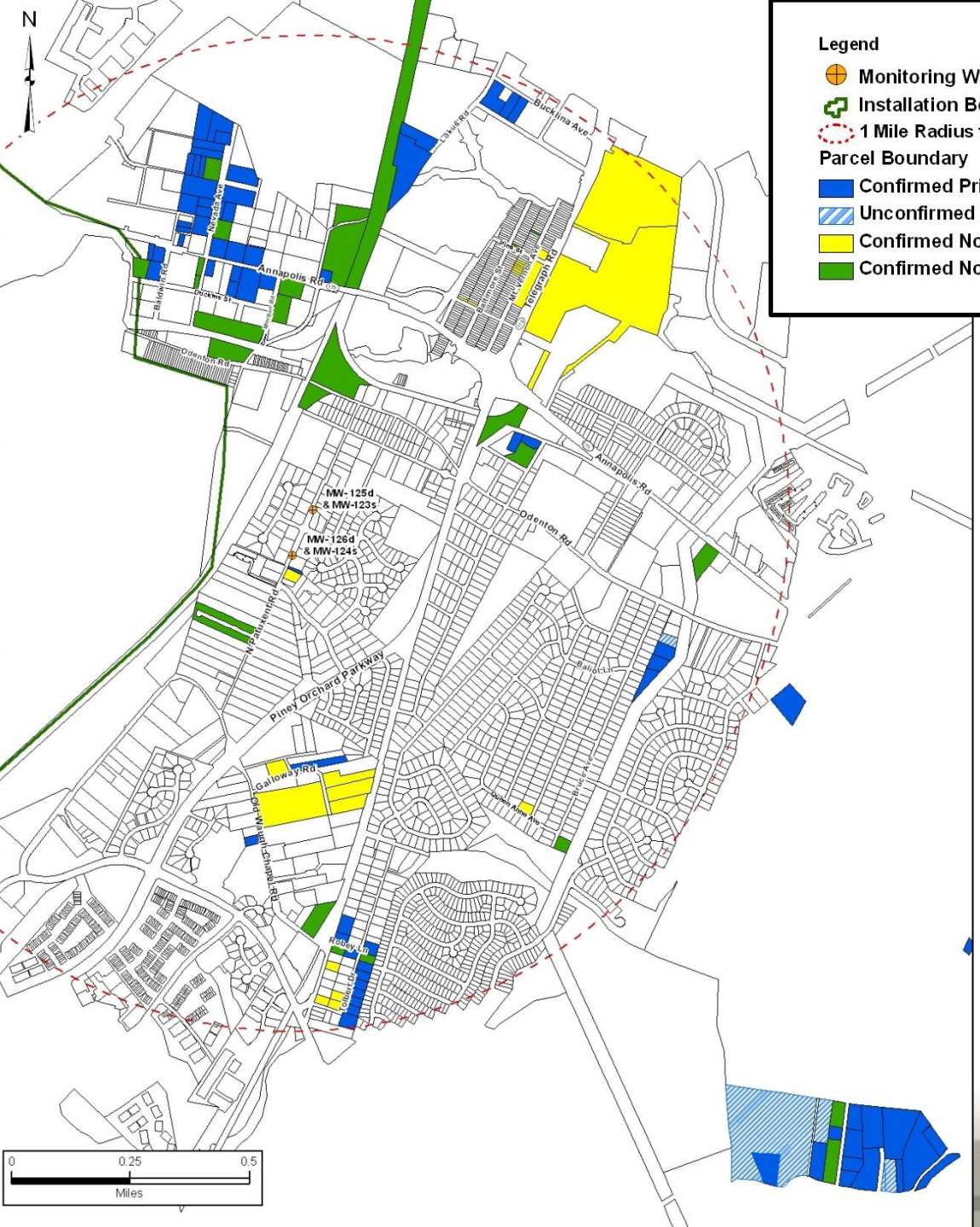
Definitions:

• Primary Source: Well is used as sole source of drinking water for property

• Non-Drinking Water Source: Well is present on property, but public water is used as drinking water source. Well water may be used for other purposes, such as watering gardens.

•Confirmed: A response to survey was received from property owner/tenant.

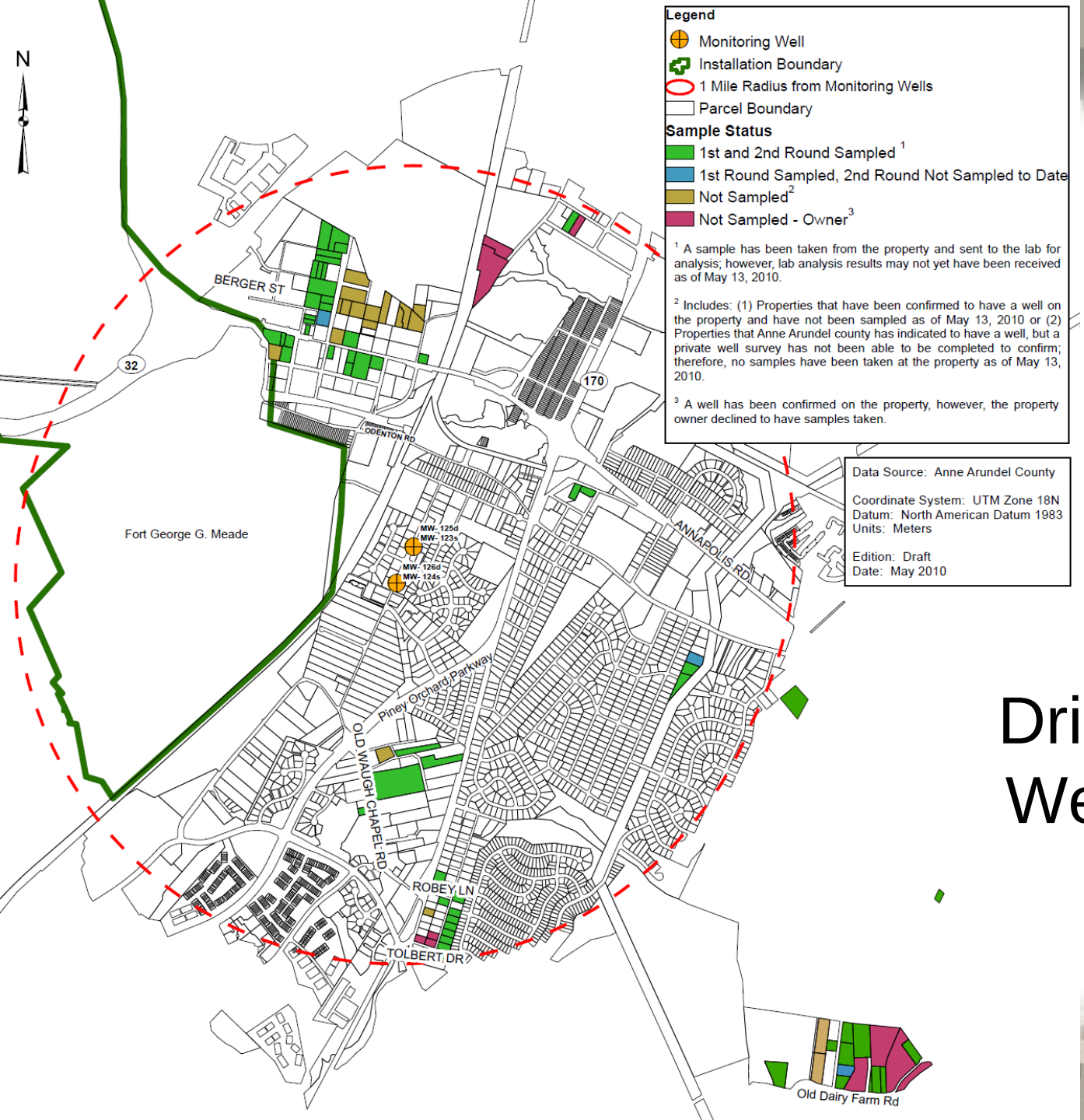
• Unconfirmed: No response to survey to date, but Anne Arundel County data indicates a well is present on the property.



Drinking Water Well Survey Results

Drinking Water Well Sampling

- Initiated June 5, 2009
- 75 Confirmed drinking water wells
- Round #1
  - 58 drinking water wells sampled
- Round #2
  - 54 drinking water wells sampled
- Reasons why all 75 confirmed wells were not sampled
  - Owner/tenant unresponsive to sampling request
  - Owner/tenant unresponsive to attempts to schedule
  - Owners declined sampling



Drinking Water Well Sampling Results

Drinking Water Well Results

Street	Addresses with Detections Detections		DCE (MCL - 70 µg/L)		DCA (MCL - 5 µg/L)		TCE (MCL - 5 µg/L)		PCE (MCL - 5 µg/L)		CCl_4 (MCL - 5 µg/L)		Methylene Chloride (MCL - 5,900 µg/L)		1,1,1-Trichloroethane (MCL - 5,900 µg/L)	
	Round 1	Round 2	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)	# of Detections	Range (µg/L)
Baliol Ln	*0*	*1*	--	--	--	--	--	--	1	0.72J	--	--	--	--	--	--
Berger St	0	1	--	--	1	0.51 J	--	--	--	--	--	--	--	--	--	--
Galloway Rd	1	1	--	--	--	--	2	3.2 - 3.5	2	1.3 - 1.9	--	--	--	--	--	--
Murray Rd	2	2	--	--	--	--	--	--	3	0.94J - 2.6	4	0.88J - 1.2	--	--	--	--
Nevada Ave	6	7	6	1.1 - 1.7	--	--	3	0.46J - 0.87J	8	0.60J - **5.7**	--	--	1	0.60J	--	--
Old Waugh Chapel Rd	1	0	--	--	--	--	--	--	--	--	--	--	--	--	1	0.54J
Robey Ln	2	3	5	0.22J - 0.44J	--	--	--	--	--	--	--	--	--	--	--	--
Tolbert Dr	0	1	1	0.18J	--	--	--	--	--	--	--	--	--	--	--	--

J = Estimated Value

MCL = Maximum Contaminant Level for tap water as defined by the US Environmental Protection Agency

µg/L = one microgram per liter which is equivalent to one part per billion

**Only properties with detections related to the Interim Measures for Monitoring Wells 125d and 126d study are included in the table.*

*** **Bold** indicates value above MCL. Only one sample was above the MCL and resident is receiving bottled water.*

***Data is current as of 14 May 2010

DCE = Dichloroethene

DCA = Dichloroethane

TCE = Trichloroethene

PCE = Tetrachloroethene

CCl_4 = Carbon Tetrachloride

Evaluation of Drinking Water Well Interim Results

- No MCL exceedances downgradient of MWs 125d/123s and 126d/124s
- Only one property above MCL within study area
  - Nevada Ave
    - Above MCL in September 2009 and February 2010
    - Resident supplied bottled water (beginning July 2009)
    - Cross-gradient and approximately 0.75 miles from MW-125d/123s and MW-126d/124s
    - Monthly drinking water sampling initiated

Nevada Avenue Monthly Sampling - Interim Results

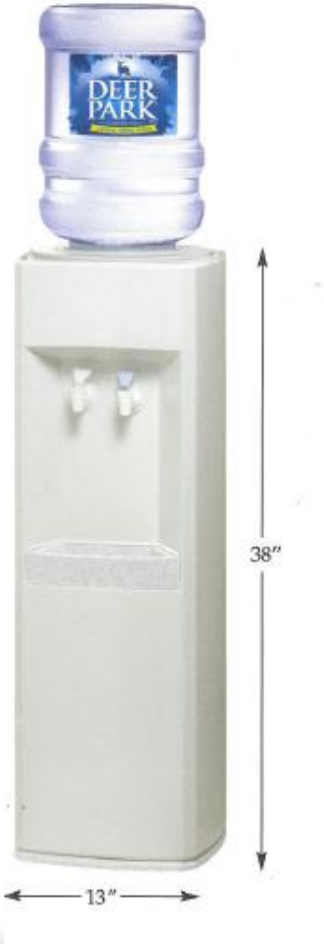
- Initiated in October 2009 for property with MCL exceedance and 2 adjacent properties
- One additional MCL exceedances to date (Feb 2010)
- One detection equal to PCE MCL (Nov 2009)

Month	*Dichloroethene (MCL - 70 µg/L)*		*Tetrachloroethene (MCL - 5 µg/L)*		*Trichloroethene (MCL - 5 µg/L)*	
	# of Detections /Samples	Range (µg/L)	# of Detections /Samples	Range (µg/L)	# of Detections /Samples	Range (µg/L)
Oct 09	1/1	1.7	1/1	4.5	1/1	0.77J
Nov 09	3/3	1.1-1.8	3/3	2.7-5.0	2/3	0.71J-0.84J
Dec 09	3/3	1.7-1.9K	3/3	3.6-4.6	3/3	0.52J-0.68J
Jan 10	2/2	1.4-1.6	2/2	3.8-4.9	0/2	--
Feb 10	3/3	1.4-1.9	3/3	4.4-5.3	3/3	0.57J/0.85J
Mar 10	3/3	1.2J-1.5J	3/3	3.3J-4.3J	3/3	0.48J-0.51J
Apr 10	3/3	1.6-1.7	3/3	3.8-4.2	3/3	0.61J-0.68J

Data Qualifiers:
•K = reported value may be biased high
• J= estimated concentration below the method detection limit

Bottled Water

- Bottled water is supplied to properties:
  - Identified drinking water drinking water well, and
  - Used as primary source for drinking water (i.e., not connected to county water), and
  - Accepted by tenant/owner
- Status:
  - 43 properties supplied water to date
  - Additional deliveries available pending tenant/owner's agreement



Next Steps

- Complete private well survey
- Complete drinking water well sampling
- Continue to supply bottled water
- Reporting
  - Survey Summary Report (May 2010)
  - Round #1 Sample Summary Report (Jun 2010)
  - Interim Measures Report (Aug 2010)

Additional Information

- Additional information available at:
  - Fort Meade Environmental Management System (EMS) website: http://www.fortmeade-ems.org
  - U.S. Environmental Protection Agency website on Fort Meade: http://www.epa.gov/reg3hwmd/super/sites/MD9210020567/index.htm
  - Maryland Department of Environment website: http://www.mde.state.md.us/
  - Anne Arundel County Department of Health website: www.aahealth.org
  - Agency for Toxic Substances and Disease Registry website for chemical factsheets: http://www.atsdr.cdc.gov/az/a.html
- A copy of this presentation can be found on the Fort Meade EMS website

Points of Contact

U.S. Army Garrison Fort George G. Meade

Directorate of Public Works-Environmental Division

2212 Chisholm Avenue, Suite 5115

Fort Meade, Maryland 20755-7068

- Michael (Mick) Butler
  - Environmental Division Chief
  - 301-677-9188
  - mick.butler@us.army.mil
- Paul Fluck, PG, REP
  - Environmental Restoration Manager
  - 301-677-9365
  - paul.v.fluck@us.army.mil